

## Three New Species of Mononchoidea (Nematoda) from the Southern Hemisphere

By

I. ANDRÁSSY\*

**Abstract.** Three new species of the superfamily Mononchoidea are described. *Clarkus pulcherrimus* n. sp. (Mononchidae) from Australia is the longest-tailed representative of the genus. *Cobbonchue collaris* n. sp. (Mononchidae) from Brazil can be distinguished by its uniformly narrowing, arcuate tail. *Margaronchulus adeniticulatus* n. sp. (Mylonchulidae) from the Congo Republic is characterized by the short tail and the absence of any small denticles in the buccal cavity.

Two new species of the family Mononchidae and one of the family Mylonchulidae, all collected south of the Equator, are presented here.

*Clarkus pulcherrimus* n. sp.  
(Fig. 1 A–E)

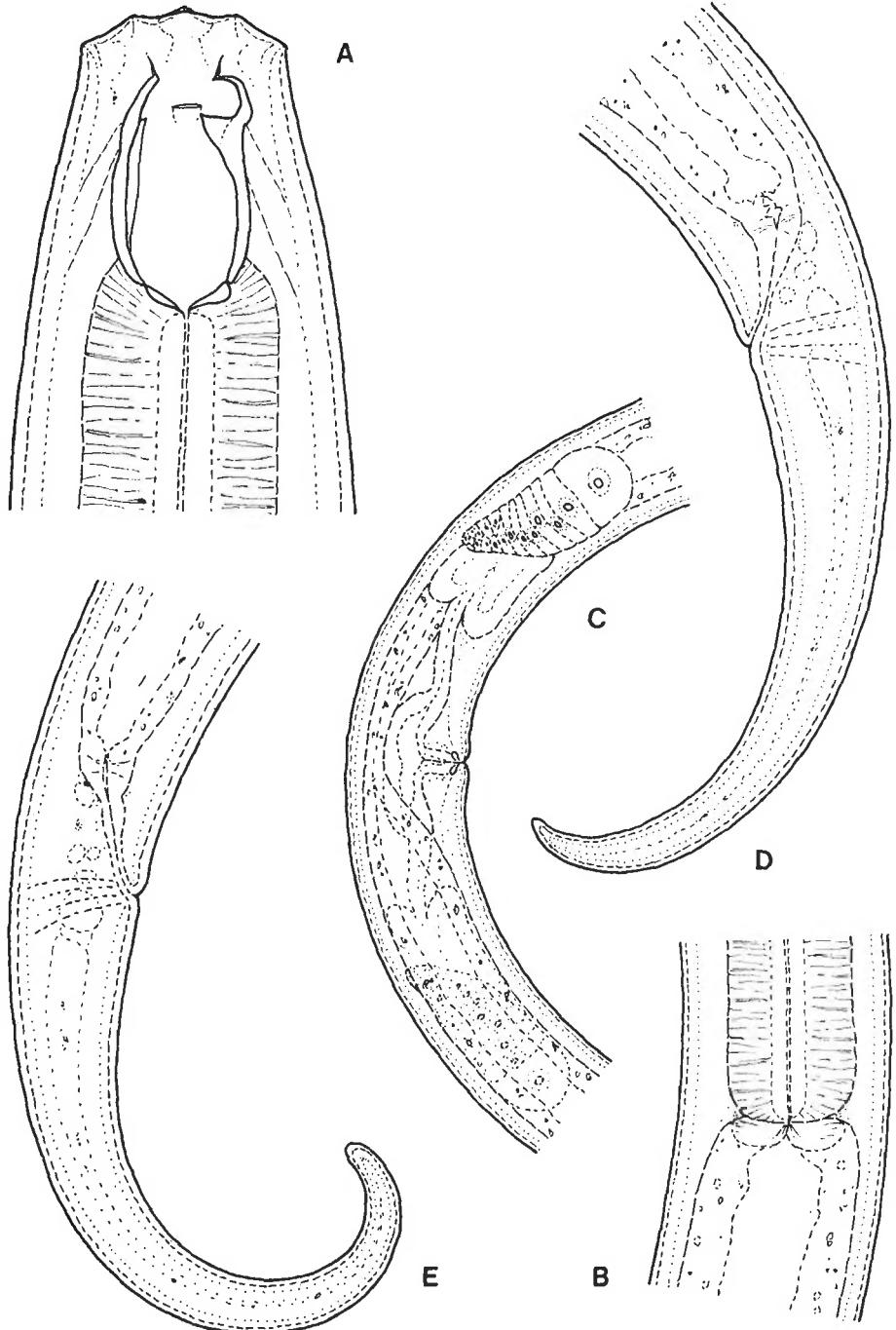
♀: L = 2.0–2.2 mm; a = 31–33; b = 5.2–5.4; c = 8.9–10; V = 45–46%; c' = 5.7–6.0.

A fine species with large body and strikingly long tail. Body 65–67  $\mu\text{m}$  wide. Cuticle smooth, in the mid-body only 1.5–2  $\mu\text{m}$  thick, on the tail thicker, 3  $\mu\text{m}$ . Labial region 26–30  $\mu\text{m}$  wide, not set off, lips rounded. Body at posterior end of oesophagus twice as wide as head. Amphid caliciform, with oval opening, located somewhat anterior to the dorsal tooth, its diameter 1/7 of corresponding body width.

Buccal capsule 28–30  $\mu\text{m}$  long, 1/13–1/14 of entire length of the oesophagus, about as long as cephalic diameter, twice as long as wide. Dorsal tooth strong, with anterior margin slightly directed forward; tooth apex situated in 18–20% of the length of buccal cavity. Ventral ridges opposite the dorsal tooth beginning at level of the latter. Oesophagus 382–404  $\mu\text{m}$  long, 18–19% of the length of body: its posterior end not tuberculate. Rectum nearly equal in length with the anal body diameter. No residues of food could be observed in the animals.

Female genital organ paired; each gonad 3.2–3.5 times as long as body diameter or 9.5–11% of body length, respectively. Anterior gonad situated on

\* Dr. István Andrásy, ELTE Állatrendszertani és Ökológiai Tanszék (Department of Systematic Zoology and Ecology of the Eötvös Loránd University), 1088 Budapest, Puskin-u. 3.



Figs. 1 A – E. *Clarkus pulcherrimus* n. sp. A: anterior end ( $1000\times$ ); B: cardial region ( $400\times$ ); C: female genital region ( $210\times$ ); D – E: female tails ( $400\times$ )

the right, posterior gonad on the left side of the intestine. Vulval lips not protruding, vagina 1/3 as long as corresponding width of body.

Distance between vulva and anus 3.8–4.6 times as long as tail.

Tail 210–230  $\mu\text{m}$ , 5.7–6 times as long as anal body diameter, 10–11% of body length, ventrally arcuate, uniformly narrowing to its tip. Caudal glands rudimentary, terminal opening absent.

Brief characteristics: Body comparatively long, cuticle thin, lips rounded, apex of dorsal tooth located in anterior fifth of mouth cavity, tail long. Male unknown.

Holotype: ♀ on the slide No. A–9663 in the collection of the author.

Type locality: Australia, Canberra, Uriaria Forest, humus from a *Pinus radiata* plantation, July 1968. Other localities: Australia, Canberra, Blue Range, mosses from a *Pinus radiata* forest, July 1968; Australia, Perth, Northcliffe, soil from a rain forest, July 1968. All samples collected by J. BALOGH and I. LOKSA (Budapest).

This fine and long-bodied *Clarkus* species can be distinguished from every species of the genus by its strikingly long tail and the vulva located before the middle of body length. Comparing it with the longest-tailed species known hitherto, *C. elongatus* JAIRAJPURI & KHAN, 1977, the following differences can be observed: in *elongatus* the tail is 140–180  $\mu\text{m}$  long, 3–4 times longer than anal body diameter,  $c = 15–18$ ,  $V = 60–64\%$ ; in *pulcherrimus* the tail is 210–230  $\mu\text{m}$  long, 6 times anal body diameter,  $c = 9–10$ ,  $V = 45–46\%$ .

Together with *Clarkus pulcherrimus* eight species of the genus have been described. Of them, two occur in Australia: *C. papillatus* (BASTIAN, 1865) JAIRAJPURI, 1970 and the present new species.

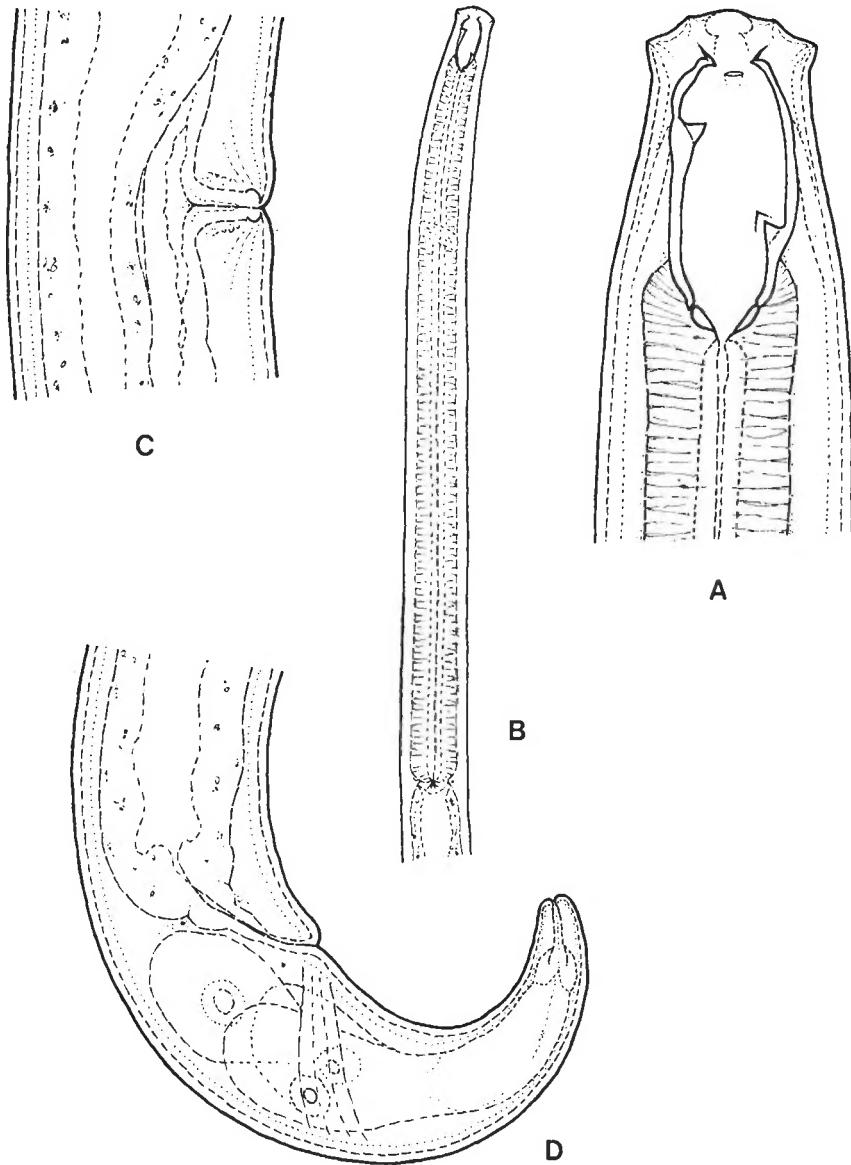
*Cobbonchus collaris* n. sp.  
(Fig. 2 A–D)

♀:  $L = 1.60–1.62 \text{ mm}$ ;  $a = 42–44$ ;  $b = 3.3–3.4$ ;  $c = 24–25$ ;  $V = 60\%$ ;  
 $c' = 2.2–2.3$ .

Body slender, 36–38  $\mu\text{m}$  wide in the middle. Cuticle smooth, 1.4–1.5  $\mu\text{m}$  thick. Head not set off, 22–23  $\mu\text{m}$  wide, wider than the adjacent neck region; lips separate, protruding. Amphid oval, only 1/8 as wide as corresponding body width, located somewhat posterior to the beginning of mouth cavity.

Buccal cavity  $34 \times 16 \mu\text{m}$ , twice as long as wide, 1.5 times longer than cephalic diameter, about 1/14 of total length of the oesophagus. Stoma armed with three teeth of nearly equal size. Anterior margin of dorsal tooth at right angle to the body axis, those of subventral teeth oblique. Apex of dorsal tooth in 22%, apices of subventral teeth in 56–58% of mouth cavity. Oesophagus 470–474  $\mu\text{m}$  long, 29–30% of body length. Oesophago-intestinal junction not tuberculate. Cardia discoidal. Rectum as long as anal body diameter. In the intestine of each specimen one or two small nematodes devoured in toto could be observed.

Female gonads paired; anterior branch 4–4.2 times as long as body diameter or 9% of body length, posterior branch 3–3.2 times as long as body diameter or 7% of body length. Anterior gonad situated on the left, posterior gonad on the right side of the intestine. Vulval lips not protruding, vagina 1/3 of corresponding body width. Distance vulva-anus 8.5 times longer than tail.



Figs. 2 A – D: *Cobbonchus collaris* n. sp. A: anterior end ( $1000\times$ ); B: oesophagus; C: vulval region ( $780\times$ ); D: female tail ( $780\times$ )

Tail 66–68  $\mu\text{m}$  long, 2.2–2.3 times anal body diameter, uniformly narrowing to its 5  $\mu\text{m}$  broad terminus, ventrally arcuate. Two of the three caudal glands lying side by side, the third one located before them. Tip of tail cut off somewhat oblique.

Male not known.

Brief characteristics: Body fairly large and slender, buccal cavity long, teeth of equal size, oesophagus very long, anterior gonad longer than posterior one, tail arcuate and uniformly tapering.

Holotype: ♀ on the slide No. A–9570 in the collection of the author.

Type locality: Brazil, Fazenda Agua Azul near Belém, neuston from a creek, September 1967, leg. J. BALOGH (Budapest).

*Cobbonchus collaris* n. sp. can be distinguished from all the 22 species of the genus known hitherto by its uniformly narrowing, arcuate tail. There is an only species which may be compared with it in this respect, *C. radiatus* (COBB, 1917) ANDRÁSSY, 1958. The comparison cannot be however complete since the single animal described by COBB was an immature female. The measurements of *C. radiatus* are: L = 0.8 mm; a = 35; b = 3.3; c = 20; (V = 74%). Unfortunately, COBB illustrated the anterior end and the tail tip only, the actual shape of the tail has remained unknown. If we still compare *collaris* with the laconic description of *radiatus*, we can state that the new species can be certainly separated by two characters from COBB's animal: 1) the buccal cavity is more oblong and, in comparing with the cephalic diameter, longer; 2) the vulva is situated not so far from body center (60% : 70%). On the basis of these I consider the Brazilian nematode to be a valid species, whilst *C. radiatus* is at the moment a species inquirenda only.

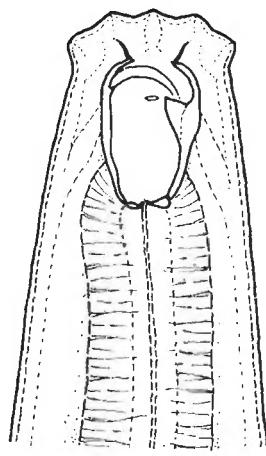
*Margaronchulus adenticulatus* n. sp.  
(Fig. 3 A–D)

♀: L = 0.73–0.75 mm; a = 26–28; b = 3.6–3.7; c = 22–24; V = 68–69%; c' = 2.3–2.4.

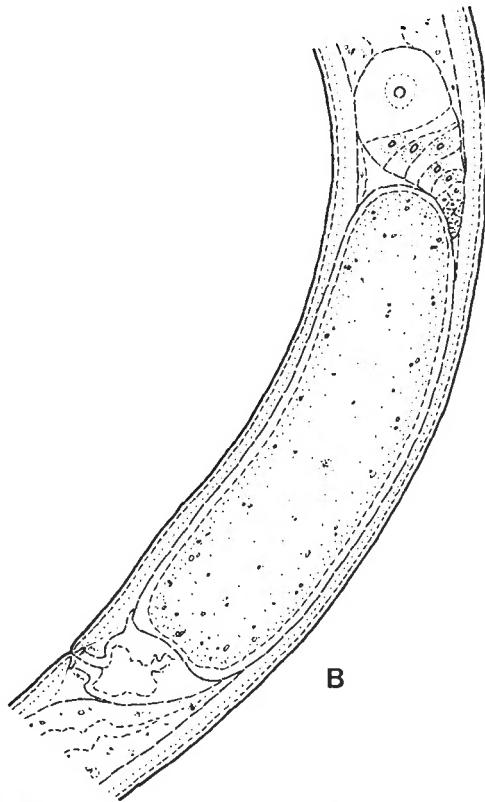
A small species. Cuticle smooth and very thin, 0.5–0.7  $\mu\text{m}$  on mid-body and not thicker on the tail, too. Cephalic region well set off, 17–18  $\mu\text{m}$  wide, lips prominent, with rounded papillae. Body at posterior end of oesophagus 1.4–1.5 times as wide as head. Amphid level with the dorsal tooth.

Buccal cavity 15–16  $\times$  11  $\mu\text{m}$  (21–22  $\mu\text{m}$  long from the anterior end of body), *Mylonchulus*-like in general appearance but comparatively broader in its proximal end. Dorsal tooth large, with apex directed anteriorly and situated in 21–22% of mouth cavity. It is opposed by two transverse, arcuate ribs on each subventral wall which run parallel for the most part but are convergent in their subdorsal ends. These ribs are smooth and continuous, nowhere split into small denticles. Oesophagus 200–205  $\mu\text{m}$  long, distance between posterior end of it and vulva 1.5–1.6 times longer than oesophagus. Oesophago-intestinal region not tuberculate. Rectum as long as anal body diameter.

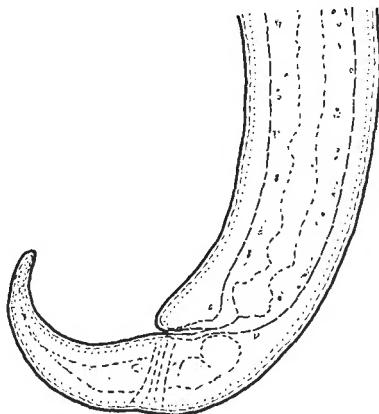
Vulval lips flat, vagina 1/3 as long as corresponding width of body. Female gonad unpaired, prevulval, 4.5–4.7 times body diameter or 18% of body length. Uterus with a very small posterior sack. Egg large, 94  $\times$  27  $\mu\text{m}$ , 3.3 times as long as body width at the same level. Distance between vulva and anus 5.9–6 times longer than tail.



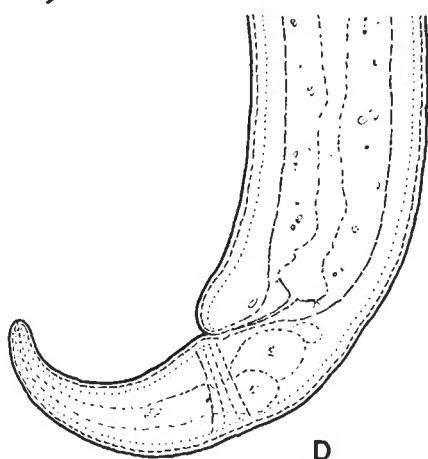
A



B



C



D

Figs. 3 A - D. *Margaronchulus adenticulatus* n. sp. A: anterior end ( $1250\times$ ); B: female genital organ ( $680\times$ ); C: tail of a young specimen ( $1000\times$ ); D: female tail ( $1000\times$ )

Tail 32–34  $\mu\text{m}$  long, 2.3–2.4 times anal body diameter, conoid, ventrally curved, with finely rounded tip. Anterior lip of anus swollen; anal diameter of body 18–19  $\mu\text{m}$  on the anterior and 14  $\mu\text{m}$  on the posterior lip. Caudal glands rudimentary, spinneret mostly absent, or, in some specimens, present but weak.

Male unknown.

Brief characteristics: Body moderately long, cuticle very thin, mouth cavity besides the dorsal tooth with two pairs of transversal ribs but without any denticles, female gonad prodelphic, tail conical, short, caudal glands reduced.

Holotype: ♀ on the slide No. A – 10869, in the collection of the author.

Type locality: Congo Republic, Sibiti, humus from a rain forest, December 1963, leg. A. ZICSI (Budapest).

Although this new species has no denticles in the buccal cavity I mean it to be congeneric with *Margaronchulus mulveyi* ANDRÁSSY, 1972. They are in accordance in the following (generic) characters: 1) head set off; 2) mouth cavity of *Mylonchulus* shape but broader proximally; 3) dorsal tooth similarly *Mylonchulus*-like; 4) two transversal ribs on each subventral wall of stoma; 5) gonad prodelphic; 6) caudal glands reduced. Besides, it should be mentioned that both species have been collected in the Congo Republic, in localities situated not far from each other. *Margaronchulus adenticulatus* n. sp. can be distinguished from *M. mulveyi* by the smaller body (0.73–0.75 mm versus 0.93 mm), the continuous, non-denticulate ribs in the buccal cavity, the much shorter and conoid tail (tail in *mulveyi* filiform, 12 times as long as anal body diameter) and the vulva located far back (67–69% versus 57% in *mulveyi*).

The genus *Margaronchulus* ANDRÁSSY, 1972 belongs to the family Mylonchulidae, and seems to have a Central African distribution. It differs from the other genera of the family — *Mylonchulus* (COBB, 1916) ALTHERR, 1953, *Brachonchulus* ANDRÁSSY, 1958, *Polyonchulus* MULVEY & JENSEN, 1967, *Oligonchulus* ANDRÁSSY, 1976, *Paramylonchulus* JAIRAJPURI & KHAN, 1982 and *Megaonchulus* JAIRAJPURI & KHAN, 1982 — by the buccal cavity being relatively broad in its proximal end, the presence of two arched transversal ribs on each subventral wall of the stoma — of which the anterior one may be divided in a row of minute denticles —, and by the monodelphic, anteriorly developed gonad. *Paramylonchulus* shows also a prodelphic gonad but differs from *Margaronchulus* in having numerous denticles in the mouth cavity and well-developed caudal glands.

It shall be noted that quite recently SIDDIQI described a new genus and species, *Nigrонchus parvus* SIDDIQI, 1984, from Nigeria. This nematode shows some similarities to both species of *Margaronchulus* — a small body, an anterior female gonad and a weak armature in the buccal cavity — it differs, however, in essential characteristics from them: the mouth cavity has a mononchoid not a mylonchuloid type, the dorsal tooth is weaker, and there are no transversal ribs on the subventral walls of the stoma. On the basis of these features *Nigrонchus* seems to belong to the family Mononchidae — not to the family Mylonchulidae.

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